

7850.4200 FACTORS EXCLUDED.

When the Public Utilities Commission has issued a Certificate of Need for a large electric power generating plant or a high voltage transmission line or placed a high voltage transmission line on the certified HVTL list maintained by the commission, questions of need, including size, type, and timing, questions of alternative system configurations, and questions of voltage shall not be factors considered by the commission in deciding whether to issue a permit for a proposed facility.

Statutory Authority: *MS s 116C.66; 216E.16*

History: *27 SR 1295; L 2005 c 97 art 3 s 19*

Published Electronically: *September 18, 2009*



Minnesota Pollution Control Agency

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Crookston Terminal
Alternative

August 6, 2014

Mr. Burl Haar, Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Dear Mr. Haar:

RE: Enbridge Sandpiper Pipeline Project, Docket No PL 6668/PPL-13-474

The Minnesota Pollution Control Agency (MPCA) has reviewed the comments and recommendations submitted by the Department of Commerce (DOC) on July 16, 2014, which will be considered by the Public Utilities Commission (Commission) at the August 7, 2014, hearing for the Enbridge Sandpiper Pipeline project. The MPCA offers the following comments on the project and the DOC's July 16, 2014, recommendations.

The recent boom in the production of oil and gas in North Dakota and surrounding areas has brought about an increase in the number of planned and proposed projects in Minnesota for the transportation, storage, and processing of these resources and their related products and uses. This activity has increased citizen and Agency interest in the amount and quality of information available to adequately assess the individual and cumulative environmental impacts of these projects and to fully inform decision-making processes.

Many alternatives to the proposed Sandpiper project and route have been suggested in the routing (PPL-13-474) and certificate of need (CN-13-473) proceedings, including rail transport, trucking, and numerous pipeline routes. The Commission will determine which alternatives are to be addressed in greater detail as the environmental review, certificate of need, and permitting processes move forward.

Given the high potential of additional pipelines and replacement or upgrading of existing pipelines in the near future, and within the same corridors, it is critical that the current effort consider multiple alternatives, including both route and system alternatives. For the reasons outlined below, limiting the alternatives to route options alone at this stage would unnecessarily narrow the scope of project options to reduce environmental and public health risks.

In our comments, the MPCA has suggested both route and system alternatives; these are discussed in the DOC's July 16, 2014, filing. I am concerned that the system alternative recommended for consideration by the MPCA may not be evaluated in these proceedings, since it does not include the Clearbrook terminal. The DOC evaluated the MPCA's system alternative, SA-03, and developed a connector segment to Clearbrook that would convert SA-03 into a route alternative. The MPCA supports inclusion of the SA-03 route with the connector segment developed by DOC as a less environmentally harmful route alternative than the proposer's route.

Mr. Burl Haar, Executive Secretary

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August 6, 2014

The MPCA's view is that the environmental impacts of system alternatives need to be considered as well as route alternatives. A system alternative that will transport oil to an alternative terminal with significantly less environmental harm should be evaluated in these proceedings.

My understanding is that system alternatives are considered in the Certificate of Need (CN) proceeding for this project. I also understand that DOC conducts environmental review of system alternatives in High Voltage Transmission Line certificate of need proceedings in the form of an Environmental Report (ER), but that this review is not conducted for pipeline certificate of need proceedings. The MPCA respectfully requests that the Commission request the DOC to prepare an ER-type review of alternatives to the project, including SA-03 as originally proposed by the MPCA without the connector segment to Clearbrook, for introduction into the CN proceeding. This position is based on MPCA's understanding as follows:

1. The project purpose can be met without constructing new storage capacity in Clearbrook. If the new terminal were to be built at a more westerly location, such as Crookston, a 75-mile long pipeline to Clearbrook could be constructed for the purpose of sending the oil that Enbridge is contractually obligated to send through Clearbrook (for transport to St. Paul refineries), while the remainder of the Bakken crude could be sent via a less environmentally harmful route well to the south of the sensitive water resources, and then on to the Superior, Wisconsin terminal.
2. Locating terminal facilities near Crookston, or at another site closer to the border of North Dakota, could offer other pipeline routes as viable alternatives, such as the proposed "System Alternatives" identified in the July 16, 2014, DOC recommendations. A terminal closer to the Minnesota/North Dakota border could be the point of origination for future pipelines that would travel to the south and avoid the potential threat to sensitive water resources that the MPCA has identified as being associated with the currently proposed Sandpiper route.

Thank you for consideration of our request.

Sincerely,



John Linc Stine
Commissioner

JLS:bt

Study Title	Year Completed	Utility Lead	Description
Minnesota Transmission Assessment and Compliance Team 2015 Transmission Assessment (2015 – 2025)	2015	MTO	This report is an annual transmission assessment investigating near-term, mid-term, and long-term transmission conditions. The purpose of this study is to develop an understanding of the transmission system topology, behavior, and operations to determine if existing and planned facility improvements meet NERC Transmission Planning Standards TPL-001 through TPL-004.
Clearbrook Area Transmission Study (“Clearbrook Looped Service Study”)	2015	OTP/MPC	Minnkota participated in a study that evaluated the current load serving capabilities and future transmission needs in the area around Clearbrook, MN. The study was prompted by three things: pending load growth within the area, a neighboring utility’s initiative for looped service, and opportunities created by planned transmission lines out of Clearbrook. A new 230/115 kV substation near Bagley (referred to as Bagley West) and 115 kV transmission line to a location sixteen miles away (referred to as Clearbrook West) was evaluated against some alternatives. It ultimately was the favored option for meeting the stated needs. Additional details can be found in Forms 1 and 2 or in the study report (“Clearbrook Looped Service Study” written by Otter Tail Power Company).
GNTL Analysis	2015	MP	Joint study between MP and Manitoba Hydro intended to evaluate the steady state and dynamic performance of the GNTL under a variety of system conditions; Great Northern Transmission Line (2013-NE-N13)

individual utility you are interested in from the drop-down list. (NOTE: some versions of Excel will allow you to select multiple utilities).

Utility	MISO Geographic Code
American Transmission Company, LLC	ATC LLC
Dairyland Power Cooperative	DPC
Great River Energy	GRE
ITC Midwest LLC	ITCM
Minnesota Power	MP
Missouri River Energy Services	MRES
Otter Tail Power Company	OTP
Southern Minnesota Municipal Power Agency	SMP
Xcel Energy	XEL

It is also possible to sort other columns in the Appendices in a similar manner. For example only projects or facilities in Appendix A can be identified by clicking on the arrow in Column A and selecting the desired choice from the drop-down list.

6.3 Northwest Zone

6.3.1 Needed Projects

The following table provides a list of transmission needs in the Northwest Zone. Note that Minnkota Power Cooperative is not a member of MISO. The Minnkota projects are tracking numbers 2015-NW-N1 to 2015-NW-N6.

MPUC Tracking Number	MISO Project Name	MTEP Year/App	MTEP Project Number	CON?	Utility
2007-NW-N3	Winger-Thief River Falls 230 kV Line	2014/B	4232	No	OTP/ MPC
2009-NW-N2	Frazee-Perham-Rush Lake Area	2010/A	2670	No	GRE
2015-NW-N1	Clearbrook West 115 kV- Bagley West 230 kV	2015/B 2016/A	4813	No	OTP/ MPC
2015-NW-N2	Donaldson 115 kV Breaker	2015/A	8281	No	OTP
2015-NW-N3	Clearbrook-Clearbrook West 115 kV Line (Load Interconnect)	Non-MISO		No	MPC
2015-NW-N4	Moranville 230/69 kV Transformer Replacement	Non-MISO		No	MPC

issues at multiple substations in the area including LREC's Dent and Dora distribution substations.

There are eight GRE-LREC distribution substations and four OTP distribution substations served in the area between Frazee and Rush Lake. The loss the Frazee 115/41.6 kV transformer causes low voltage problems at the Dora and Dent distribution substation.

Alternatives: Leaving the transmission system in the Frazee to Rush Lake area as it is now presents severe undervoltage problems at LREC's distribution substation. The transmission line overload problems will continue to be critical in the area. Two other alternatives were considered to address the voltage and loading issues in the area. One of the alternatives recommends adding a second transformer at Frazee and rebuilding the 9 mile, 2/0 A Tap line to Dent Sub with 477 ACSR conductor. The other alternative converts 41.6 kV loads to 115 kV system in the near term and establishes a 115/41.6 kV source at the North Perham Jct in the long term. These alternatives were not found being the least cost plan to address the needs of the area for a long term.

Analysis: The Schuster Lake substation, at system intact, will serve the Dent and Perham loads which are now served from the Frazee and Rush Lake sources, respectively. The project is the least cost plan that will address the low voltage problems in the 41.6 kV system during critical contingencies in the system, the loss of the Frazee 115/41.6 kV system and loss of the Frazee to Perham 41.6 kV line. It also ensures a better load serving reliability in the area as it will provide contingency back up to the Frazee and Rush Lake sources in the area while increasing capacity in the system to serve future load growth in the transmission system.

Schedule: The Schuster Lake project is currently planned for a 2020 completion.

General Impacts: Installation of a new transformer at an existing substation is not expected to have any significant effects.

Clearbrook West 115 kV-Bagley West 230 kV

MPUC Tracking Number: 2015-NW-N1

Utilities: Minnkota Power Cooperative (MPC) and Otter Tail Power Company (OTP)

Project Description: The option selected from the Coordinated Clearbrook Looped Service Study (performed primarily by OTP) was to develop a substation near Bagley (about 4.5 miles southwest) that taps the Winger to Wilton 230 kV line, as well as a 16 mile line from the newly developed substation to the Clearbrook West 115 kV substation (as identified in 2015-NW-N3).

Need Driver: The Clearbrook area is a developing hub of crude oil pipelines, and those pipelines require pumping stations. These pumping stations are served by a network of 115 kV lines with two 230 kV sources at Wilton and Winger. Loss of any one source forces the load to be served from a single source. Additionally, loss of any transmission between Bagley and

Clearbrook threatens a substantial amount of existing and future load service. The proposed transmission facilities include a 16 mile transmission line and a new substation.

Alternatives: Several different transmission alternatives were developed as part of a Clearbrook Looped Service Study to assess the ability of the transmission system to serve the anticipated load increase for the Clearbrook area. These included:

- a new Clearbrook – Solway 115 kV line,
- a new Clearbrook – Plummer 115 kV line, or
- a capacitor bank / system rebuild alternative.

The options above have been considered and compared with a new 230 kV / 115 kV tap line, and it was determined that the benefits of such a project heavily out-weight the added investment (determined in coordinated efforts that followed the initial report).

Analysis: The option selected from the Coordinated Clearbrook Looped Service Study (performed primarily by OTP) was to develop a substation near Bagley (about 4.5 miles southwest) that taps the Winger to Wilton 230 kV line, as well as a 16 mile line from the newly developed substation to the Clearbrook West 115 kV substation (as identified in 2015-NW-N3). The newly developed substation, referred to as Bagley West, has a 230/115 kV transformer, breakers for the high and low side of the transformer, switches, relaying, and all other associated bus work. The Bagley West 230/115 kV transformer was identified as an equivalent replacement for the previously repurposed Wilton transformer #1 (OTP), with the recognition that the Wilton 230/115 kV transformer would have needed to be replaced.

Looped service for the Clearbrook area loads was evaluated in the “Coordinated Clearbrook Looped Service Study,” which was performed primarily by OTP. Of the options analyzed, the Clearbrook West 115 kV to Bagley West 230 kV option provided the best transmission option that met our transmission requirements. The study demonstrated a final upgrade requirement of looped service, to be completed by 2018.

Schedule: The study efforts mentioned above determined that an upgrade to mitigate post-contingent service issues on the Clearbrook area transmission must be completed by the winter of 2018. A schedule will be developed as definite mitigation plans are determined.

General Impacts: The area where this project will occur is almost entirely rural. There are no notable sites or locations along the route of any new transmission line between the endpoints. Any new transmission line will likely have to navigate through some wetlands and avoid some lakes along any route. There may be some impact on farmland from the location of a new transmission line, but assuming a one hundred and thirty foot right-of-way and some general estimates on electrical poles and farm equipment navigation, of a project area of 741 acres, only 65 acres will actually be impacted.

The economic and social impacts will be slight of any project to address this situation. The project may require a temporary project crew to construct the equipment, which could bring some business to the area in the form of room and board. Some landowners may receive a

financial payment as a result of this project. Finally, the project will improve the reliability of the system in the area, although it is difficult to measure the importance of an improved system.

Donaldson 115 kV Breaker

MPUC Tracking Number: 2015-NW-N2

Utility: Otter Tail Power Company (OTP)

Project Description: The Donaldson 115 kV Breaker project consists of adding a new 115 kV breaker at Donaldson on the Donaldson to Drayton 115 kV line to improve reliability of area loads.

Need Driver: The addition of a new breaker at the Donaldson 115 kV substation on the Donaldson-Drayton 115 kV line will improve reliability in the area. This breaker will reduce fault exposure to Donaldson loads over 17 miles of transmission, improve operations, maintenance, and relaying flexibility at Donaldson.

Alternatives: Due to the low cost and benefits provided by the addition of the Donaldson breaker no other alternatives were considered.

Analysis: The addition of the breaker at Donaldson reduces fault exposure, improves operations, maintenance, and provides relaying flexibility at Donaldson. This breaker improves reliability to sensitive loads in the Donaldson area.

Schedule: The addition of the Donaldson 115 kV breaker is currently scheduled for July of 2016.

General Impacts: The addition of the Donaldson 115 kV breaker will reduce fault exposure to Donaldson while improving operations, maintenance and relaying flexibility at the Donaldson substation. This project is the most cost-effective and environmentally responsible project to address the reliability concerns in the area.

Clearbrook-Clearbrook West 115 kV Line (Load Interconnect)

MPUC Tracking Number: 2015-NW-N3

Utility: Minnkota Power Cooperative (MPC)

Project Description: Due to the development of a new pump station load near Clearbrook, a new load service needed to be established. Since the forecast provided by the customer was beyond the availability of existing transmission facilities (41.6 kV transmission), the load service

was specified for 115 kV. This required a new transmission line from a nearby 115 kV substation at Clearbrook (about 6 miles of line to the southeast), as well as a newly developed substation for service to the Clearbrook West pump station load

Need Driver: The Clearbrook area is a developing hub of crude oil pipelines, and those pipelines require pumping stations. A new pumping station is developing northwest of Clearbrook, and the existing transmission/distribution system is insufficient for the customer's expected demand. As a result, a new load interconnection on the 115 kV system has been deemed necessary. The proposed interconnection facilities include a 6-mile transmission line and a new substation.

Alternatives: There was one transmission alternatives that was considered as part of this load interconnection, and that alternative involved interconnection on Ottertail's 41.6 kV system.

The 41.6 kV option was considered and compared with the 115 kV option, and it was determined that the 41.6 kV option would not be capable of the full customer demand after full development. Also, a 115 kV interconnection is more robust and energy efficient than the 41.6 kV option.

Analysis: Reliability impacts from the new load interconnection were evaluated in the "Study for New Pumping Station Load," which was performed by MPC. The study showed that a fault on one of the two 115 kV lines that serve the Clearbrook area caused overloads on the other 115 kV line during peak conditions (this also assumed that the Solway peaking generator is offline). The study demonstrated a final requirement of 150 MVA in line upgrades and 40 MVAR in capacitor bank additions, but those additional upgrades were later replaced by the MPUC project 2015-NW-N1, which includes a new 230 kV source at Clearbrook to be completed by 2018.

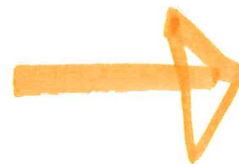
Schedule: The study efforts mentioned above determined that the new load interconnection must be completed by the fall of 2017. A schedule will be developed as definite plans are determined.

General Impacts: This project is primarily rural in location. The route will have to navigate around some lakes within the area. Assuming a one hundred foot right-of-way, the project area will be nearly 73 acres, but the affected farmland should only be about 4 acres, assuming some general estimates on electrical poles and farmland equipment navigation. The project may follow some nearby roads to some existing pump stations, farmsteads, and the Clearbrook-Gonvick School District. This project is still in its early stages of planning, so all of this information is subject to change.

This project may require a temporary project crew. If so, this may bring some business to the area in the form of room and board. In terms of local government benefits, it is possible that permit costs may be enforced on this project, but this is determined on a case-by-case basis. Also, some landowners may receive income as a result of this project, and the income may be taxable.

This project is the result of a new pump station development, but it will probably not have a substantial or lasting impact on the community in terms of population or other social

July 2013 version



ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at:

<http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm>. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. **Project title:** Clearbrook Tanks Project

2. **Proposer:** Koch Pipeline Company, L.P.

Contact person: Natalie Schoonover

Title: Environmental Manager

Address: PO Box 64596

City, State, ZIP: St. Paul, MN 55164

Phone: 651-438-1564

Fax: 651-480-3827

Email: Natalie.Schoonover2@kochpipeline.com

3. **RGU:** Minnesota Pollution Control Agency

Contact person: Patrice Jensen

Title: Principal Planner

Address: 520 Lafayette Road North

City, State, ZIP: St. Paul, MN 55155

Phone: 651-757-2465

Fax: 651-297-8683

Email: patrice.jensen@state.mn.us

4. **Reason for EAW Preparation:** (check one)

Required:

☐ EIS Scoping

☒ Mandatory EAW

Discretionary:

☐ Citizen Petition

☐ RGU Discretion

☐ Proposer Initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

5. **Project Location:**

County: Clearwater

City/Township: Leon

PLS Location (¼, ¼, Section, Township, Range): The majority of the project area is in the northeast quarter of the northwest quarter, Section 32, Township 149 Range 37

Watershed (81 major watershed scale): Clearwater River

GPS Coordinates: 47.6854505°, -095.4207631° (Degrees Lat Long)

Tax Parcel Number: R12.032.0100

Clearbrook-Clearbrook West 115 kV Transmission Line, Minnkota Power Cooperative, Inc.

Minnkota Power Cooperative, Inc. (Minnkota Power) is applying for a route permit for its Clearbrook-Clearbrook West Project pursuant to the alternative permitting procedures in Minn. R. 7850.2800 – 7850.3900. This project includes construction of a new 5.3-mile 115 kilovolt (kV) transmission line and a new 115/41.6 kV substation. The proposed project will start in Leon Township by tapping an existing 115 kV line and end in Pine Lake Township at the new Clearbrook West Substation. The proposed project is intended to serve a single industrial user in the Clearbrook area. Maps indicate this proposed transmission line ties into the Clearbrook Terminal. On August 5, 2014, Minnkota Power notified the MPUC of its intent to submit an application for a route permit.

Menahga Area 115 kV Transmission Line Project

Great River Energy and Minnesota Power filed a request for a Certificate of Need for a 22.5 mile 115 kilovolt (kV) high voltage transmission line in Hubbard, Wadena, and Becker counties. The project is primarily driven by Great River Energy's load-serving needs and the need to serve a proposed new MPL pumping station to be built by MPL as part of the MPL Reliability Project. The MPUC approved the proposed notice plan on December 8, 2014.

Motley 115 kV Transmission Line Project

A transmission line is proposed to be constructed that is associated with some of the pump stations that require permitting through the Power Plant Siting Act; it is expected to be filed with the MPUC in 2015.

c. Project magnitude:

Total Project Acreage	18.27 acres (area within site boundary, Figure 2)
Linear project length	new access road, 1,500 feet; access roads on tops of dike, 2,600 feet; roads inside containment area, 1,300 feet.
Number and type of residential units	N/A
Commercial building area (in square feet)	N/A
Industrial building area (in square feet)	121,968 square feet (2.8 acres area within tank footprint)
Institutional building area (in square feet)	N/A
Other uses – specify (in square feet)	N/A
Structure height(s)	56 feet

d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The proposed additional tanks at the Clearbrook Terminal will allow more efficient transport and storage of crude oil feedstock for Minnesota refineries. Crude oil is not homogeneous, and is typically shipped in batches. The quality of crude oil can vary between batches. The interface (mixing zone) between batches shipped in a pipeline can be lower quality than the rest of the batch, and can have a deleterious effect on the refineries the pipeline serves. Large batches help

In addition to the proposed Project, MPL has proposed a separate project (which MPL has named the MPL "Reliability Project"). MPL's pipeline system is the primary pipeline system supplying crude oil to the Twin Cities' refineries. MPL will request an increase in its capacity on MPL Line 4 from the Minnesota Public Utilities Commission (MPUC) to ensure the overall reliability of its pipeline system. This project consists of the addition of six pump stations to MPL Line 4 and other upgrades at existing stations. MPL indicates that the project will enable it to shift capacity to MPL 4, its newest pipeline, in the event of an outage on other segments of the pipeline system. In addition, MPL indicates the Line 4 project will allow MPL to conduct preventative maintenance on other segments of the pipeline system as needed without disrupting crude supplies to the Twin Cities' refineries. When MPL added Line 4 to its system in 2008, it was designed to allow for a future increase in capacity.

The MPL Reliability Project will allow the pipeline to operate at its original design capacity when needed to meet demand. Initial engineering indicates that three 10,750 gallons-per-minute pumps will be required per station. The work related to the new pump stations will occur solely on six small parcels of land located in the counties of Hubbard, Wadena, Morrison, Meeker, McLeod, and Scott. The parcels (each approximately 5-7 acres) are already owned by MPL or will be purchased by MPL. The parcels are located along the pipeline and will not require any change to the pipeline itself or acquisition of new pipeline right-of-way. In addition, two existing pump stations (located at Clearbrook and Albany) will require upgrading. One of the pump stations to be upgraded is located on the same site as the Clearbrook Terminal. The upgrade to the existing pump station will require minimal physical modification of the Clearbrook Terminal. Therefore, relevant impacts associated with the MPL Reliability Project are primarily associated with a minor increase in air emissions. KPL has applied for a capped air permit for the existing Terminal and the proposed expansion. The estimated project emissions from pump station upgrades at Clearbrook Terminal are 0.17 tons of volatile organic compounds (VOCs) per year, which is less than one percent of the VOC emissions allowed at the Terminal under the proposed capped permit. KPL has provided a separate pre-change analysis in Section 16 below, to evaluate the new pump stations and the relevant portions of the MPL Reliability Project. That analysis indicates that emissions at the Terminal from both the Clearbrook Terminal Project and the MPC Reliability Project pump station upgrade at Clearbrook can be accommodated under the proposed capped air emissions permit.

Emissions from the pump station at the Clearbrook Terminal have been included in the future emissions estimates in KPL's application for a capped air permit, and cumulative potential effects from the additional tank installations have already been accounted for as part of that permit action. The air permit application includes an analysis of both the Clearbrook Terminal tanks addition and the MPL Reliability Project in the capped permit pre-change analysis. The pre-change analysis demonstrates that the estimated future actual station emissions, incorporating the combined effect of both projects, allow the Terminal to maintain its status as a minor source of air emissions under the capped emissions permit. Further, any potential environmental impacts resulting from the MPL Reliability Project will be subject to separate review of the Certificate of Need (Docket # PI-5/CN-14-320).

Following are transmission lines which will be used to provide power to the pump stations associated with either the Terminal or Line 4. All of these projects are either in the process or will undergo environmental review related to approval processes of the MPUC.

Sandpiper Application - Appendix G.3 Facility Drawings

Location of Clearbrook Terminal
near Klungerbo Lake

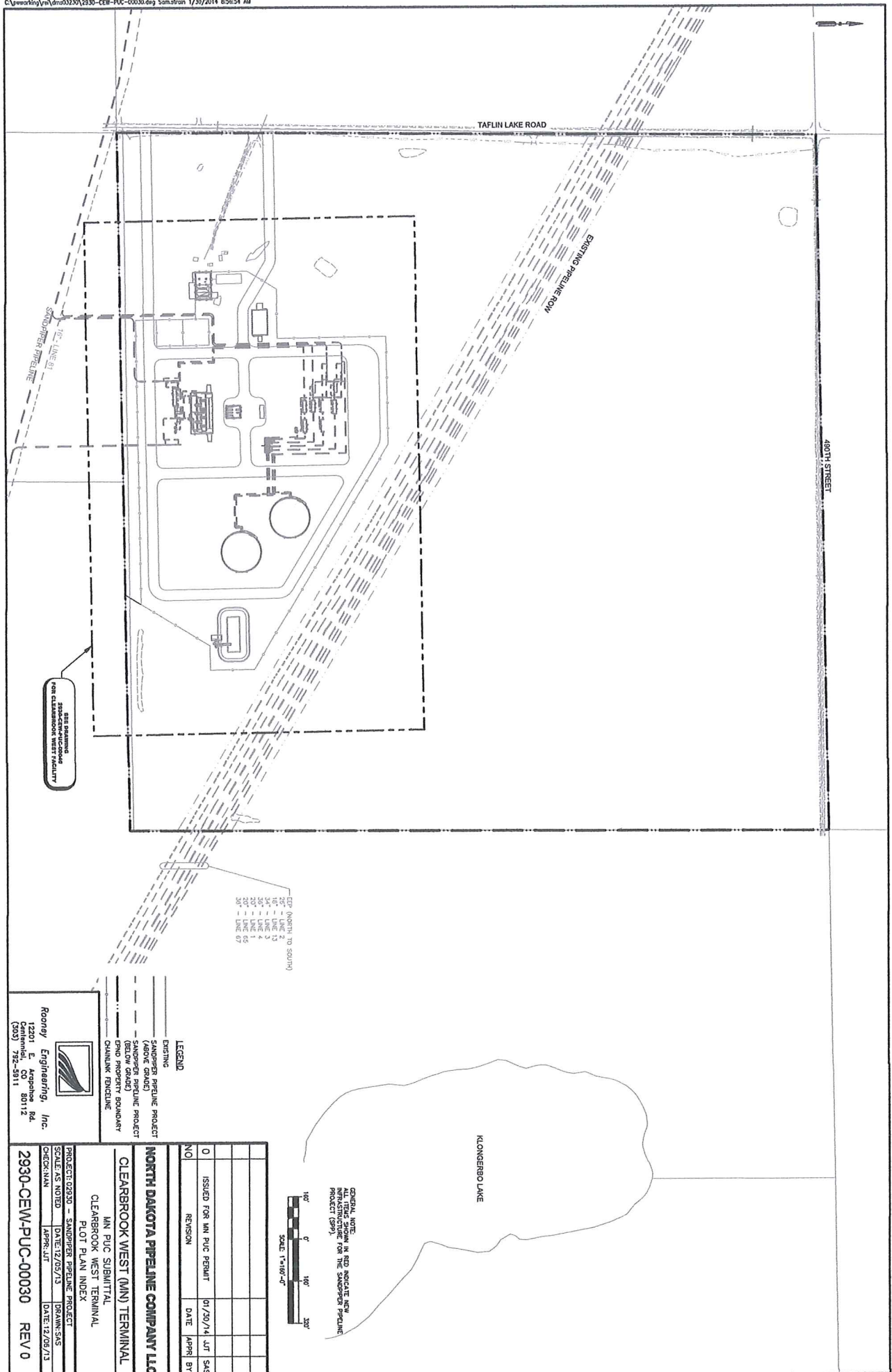
(Cover & p. 1 only)

Appendix G.3

Preliminary Clearbrook, Minnesota Facility Drawings

Preliminary Pine River, Minnesota Facility Drawing

***(These drawings indicate both the preliminary facility locations
and designs pending additional engineering design)***



Rooney Engineering, Inc.
12201 E. Arapahoe Rd.
Centennial, CO 80112
(303) 782-5911

NORTH DAKOTA PIPELINE COMPANY LLC			
CLEARBROOK WEST (MN) TERMINAL			
JUN. PUC SUBMITTAL			
CLEARBROOK WEST TERMINAL			
PLOT PLAN INDEX			
PROJECT: 02930 - SANDPIPER PIPELINE PROJECT	SCALE: AS NOTED	DATE: 12/05/13	DRAWN: SAS
CHECKMAN	APPR: JLT	DATE: 12/06/13	
2930-CEW-PUC-00030 REV 0			

for Line 3 has seen an increasing number of integrity digs and repairs in recent years. Starting in 2008, Enbridge voluntarily reduced the pressure and capacity of Line 3 to 390 thousand barrels per day (bpd). The Line 3 Replacement Project will restore the line to its historical operating capacity of 760,000 bpd from its current capacity of 390,000 bpd.

Associated facilities for the project include upgrading four existing pump stations and adding an additional four pump stations at new locations. The project will also include 27 safety valves.

Enbridge's preferred route for the Line 3 Replacement Pipeline follows the existing Enbridge mainline corridor west of Clearbrook, Minnesota, in Kittson, Marshall, Pennington, Red Lake, Polk and Clearwater counties to the terminal in Clearbrook. East of Clearbrook, the preferred route follows approximately 75 percent of existing utility corridors in Hubbard, Wadena, Cass, Crow Wing, Aitkin and Carlton counties. If a route permit is issued for the preferred route of the Sandpiper Pipeline, Line 3 will be adjacent to Sandpiper east of Clearbrook to the Minnesota/Wisconsin border; existing Line 3 will be permanently deactivated and remain in place.⁶

Cumulative impacts of high voltage transmission lines and substations needed to serve proposed Sandpiper pump stations also will be analyzed. Other reasonably foreseeable projects will be identified by searching local land use plans, current permit applications and approved, but not built, projects in the areas of the preferred and alternative routes.

VII. IMPACT OF ROUTINE CONSTRUCTION AND OPERATION

In the analysis of route alternatives, AAA impacts will be discussed as construction or operationally related. Opportunities for avoiding impacts by adjusting the ROW will be evaluated. Construction-related impacts will be identified by reviewing the Applicant-proposed Project description details. Impacts could be from access to facilities and services, vehicle emissions and fugitive dust, noise, erosion and sedimentation, soil compaction, construction solid waste/hazardous waste, vibration, and vegetation clearing. Construction material sources (borrow sites) and major utility adjustments are possible additional construction-related impacts to be considered.

The Project would require the use of heavy equipment to clear land, dig ditches, install and backfill pipe, construct ancillary facilities, and revegetate. These impacts would occur wherever the route is located. However, these impacts can be mitigated by construction measures, such as limiting construction work hours, using BMPs to control soil erosion, minimizing the removal of vegetation, and remediating soil compaction and other soil disturbances. The potential spread of invasive species due to construction and the movement of equipment along the project route will be evaluated. Mitigation measures necessary to reduce the spread of invasive species will be identified.

⁶ See Chapter 6 of the Line 3 Replacement Route Permit Application to the Minnesota Public Utilities Commission.

use 2014 update to MW planning/ERB map

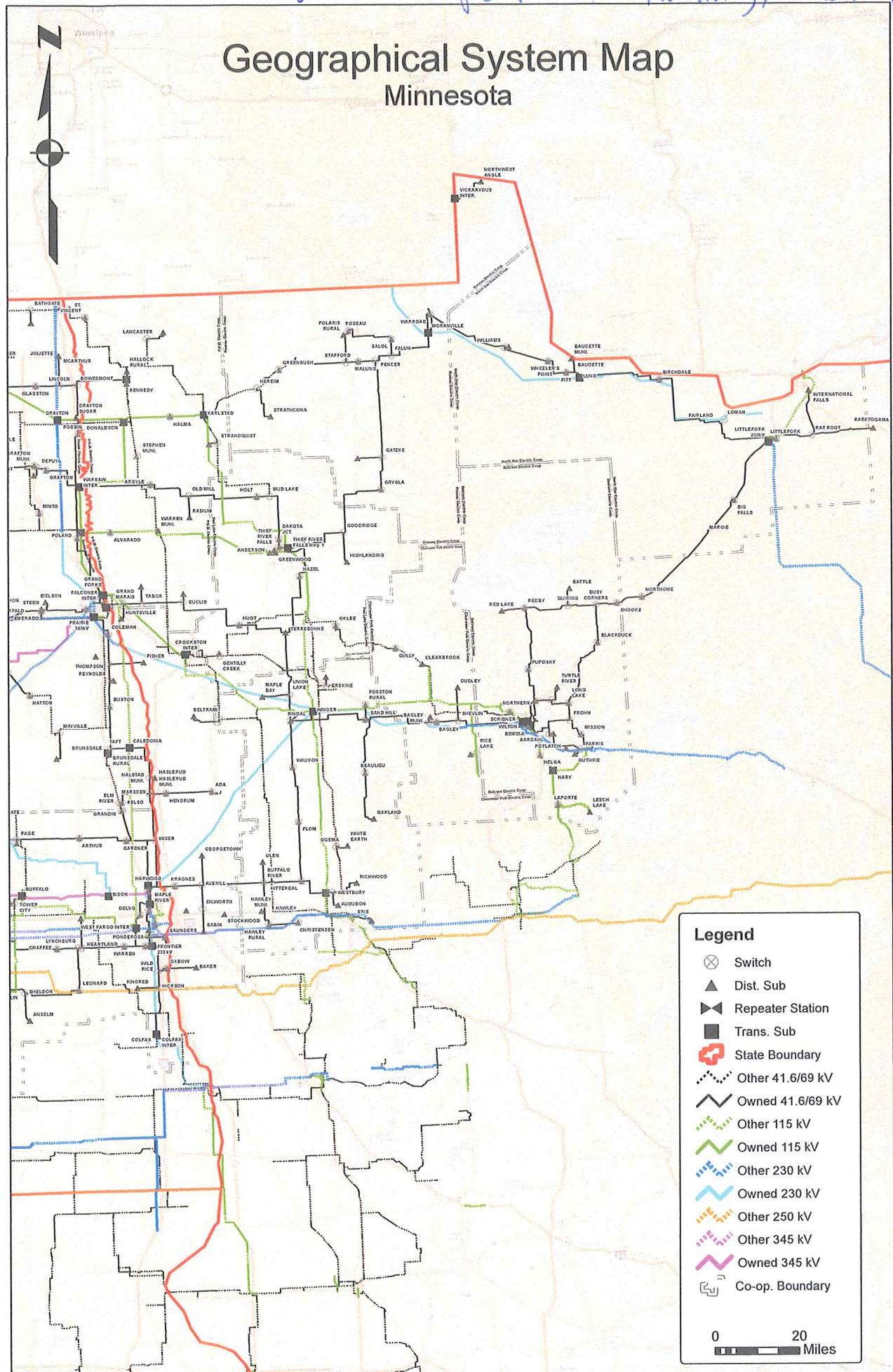
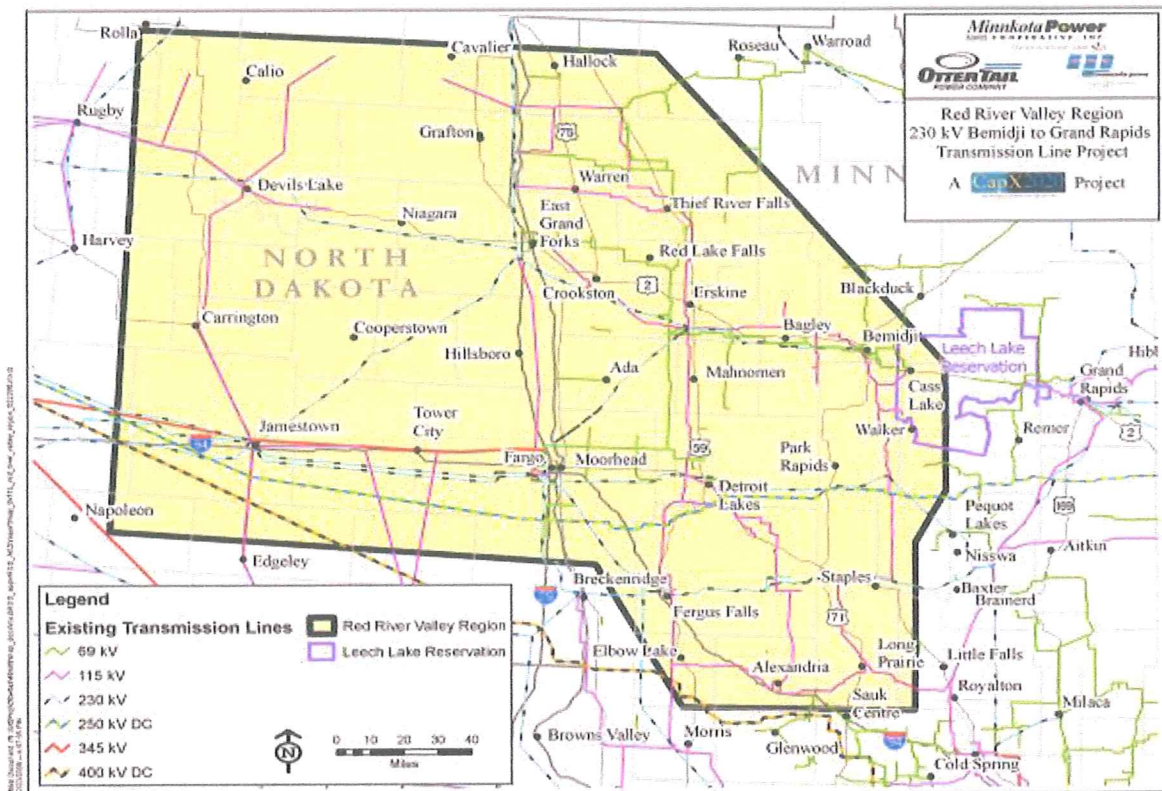


Figure 2-1. Red River Valley Transmission System



Load-serving capability in the Red River Valley is constrained by post-contingent voltage and loading concerns.

Peak load conditions result in high reactive power losses on the transmission grid, contributing to the risk of regional voltage collapse. The performance is of greatest concern during times when Manitoba is importing power from the United States. During these stressed system conditions, a prolonged outage of a high voltage transmission line in the area is difficult to sustain.

In the summer of 2000, the McHenry–Ramsey 230 kV line, which establishes a 230 kV tie from western North Dakota to Grand Forks, had about 10 miles of structures knocked down by severe storms. A coordinated emergency mobilization of the regional utilities' construction crews enabled the line to be temporarily restored to service in early December of that year to prepare for peak winter loads throughout the region. The resulting sustained outage raised operating concerns. The Northern MAPP (Mid-Continent Area Power Pool) Operating Review Working Group (NMORWG) alerted regional utilities of the potential risk of voltage collapse in the Red River Valley for various critical contingencies and system operating parameters.

